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SEQUENCE LISTING

<110> De Leys, Robert J.
Zheng, Jian

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40 Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys Trp
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10 Leu Trp Gly Cys Lys Gly Arg Ile Ile Cys Tyr Thr Ser Ala Lys Trp
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Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys Trp
20 25 30

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20 25 30
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Asp Arg Gln Ile Ser Asn Ile Ser Ser Thr Ile Tyr Glu Glu Ile Gln
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25 Glu Ala Gln Glu Gln Gln Glu Lys Asn Glu Lys Glu Leu Leu Glu Leu
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10 Lys Ala Gln Val Gln Gln Glu Glu Asn Glu Lys Lys Leu Leu Glu Leu
20 25 30
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20 <213> Human immunodeficiency virus type 1
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25 Lys Ala Gln Val Gln Gln Glu His Asn Glu Lys Lys Leu Leu Glu Leu
20 25 30
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<212> PRT
<213> Human immunodeficiency virus type 1

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Glu Ala Gln Glu Arg Gln Asp Lys Asn Glu Lys Thr Leu Leu Glu Leu
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<210> 41
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<210> 42
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10 Glu Ala Gln Asp Gln Gln Glu Asn Asn Glu Arg Glu Leu Leu Glu Leu
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Asp

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<210> 43
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25 Thr Ala Gln Asp Gln Gln Glu Arg Asn Val Lys Ala Leu Leu Glu Leu
20 25 30

Asp

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<210> 44
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35 <212> PRT
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45 Asp

5 <210> 45
<211> 33
<212> PRT
<213> Human immunodeficiency virus type 1

10 <400> 45
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<213> Artificial Sequence

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tgg 63

5 <210> 49
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 <210> 50
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25 <400> 50
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 aa 62

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 ga 62

45 <210> 52
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 aa 62

5 <210> 53
<211> 62
<212> DNA
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10 <220>
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ga

20 <210> 54
<211> 25
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25 <220>
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<400> 56
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1 5 10 15

15 Val Ser Gln Asn Met Gly Ile Gly Lys Asn Gly Asp Leu Pro Trp Pro
20 25 30
Pro Leu Arg Asn Glu Phe Lys Tyr Phe Gln Arg Met Thr Thr Thr Ser
35 40 45

20 Ser Val Glu Gly Lys Gln Asn Leu Val Ile Met Gly Arg Lys Thr Trp
50 55 60

Phe Ser Ile Pro Glu Lys Asn Arg Pro Leu Lys Asp Arg Ile Asn Ile
65 70 75 80

25 Val Leu Ser Arg Glu Leu Lys Glu Pro Pro Arg Gly Ala His Phe Leu
85 90 95

30 Ala Lys Ser Leu Asp Asp Ala Leu Arg Leu Ile Glu Gln Pro Glu Leu
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Ala Ser Lys Val Asp Met Val Trp Ile Val Gly Gly Ser Ser Val Tyr
115 120 125

35 Gln Glu Ala Met Asn Gln Pro Gly His Leu Arg Leu Phe Val Thr Arg
130 135 140

Ile Met Gln Glu Phe Glu Ser Asp Thr Phe Phe Pro Glu Ile Asp Leu
145 150 155 160

40 Gly Lys Tyr Lys Leu Leu Pro Glu Tyr Pro Gly Val Leu Ser Glu Val
165 170 175

45 Gln Glu Glu Lys Gly Ile Lys Tyr Lys Phe Glu Val Tyr Glu Lys Lys
180 185 190

Gly Ser Arg Ser Ala Arg Leu Leu Ser Gly Ile Val Gln Gln Gln
195 200 205

50 Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His Met Leu Gln Leu
210 215 220

Thr Ala Trp Gly Ile Lys Gln Leu Arg Ala Arg Leu Gln Ala Leu Glu
225 230 235 240

Thr Leu Met Gln Asn Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys Gly
245 250 255

5 Arg Ile Ile Cys Tyr Thr Ser Ala Arg Trp His Ala Ser Trp Ser Asn
260 265 270

Lys Ser Leu Glu Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp
10 275 280 285

Gln Gln Val Asn Asn Val Ser Ser Ile Ile Tyr Asp Lys Ile Leu Glu
290 295 300

15 Ala Gln Asp Gln Gln Glu Glu Asn Val Arg Glu Leu Leu Glu Leu Asp
305 310 315 320

Lys Trp Ala Ser Leu Trp Asn Trp Phe Asp Ile Thr Asn Trp Leu Trp
325 330 335

20 Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu Val Gly Leu Arg
340 345 350

Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val Arg Gln Gly Tyr
25 355 360 365

Ser Pro Leu Ser Leu Gln Thr Arg Pro Pro Val Pro Arg Gly Pro Asp
370 375 380

Arg Pro Glu Gly Ile Glu Glu Gly Gly Glu Arg Asp Arg Asp Thr
30 385 390 395 400

Ser Gly Arg Leu Val His Gly Phe Leu Ala Ile Ile Trp Val Asp Leu
405 410 415

35 Gly Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn Ser Ala Val
420 425 430

Asp His His His His His
40 435

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<223> Description of Artificial Sequence:HIV Consensus Sequence

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15 Val Ser Gln Asn Met Gly Ile Gly Lys Asn Gly Asp Leu Pro Trp Pro
20 25 30

20 Pro Leu Arg Asn Glu Phe Lys Tyr Phe Gln Arg Met Thr Thr Thr Ser
35 40 45

25 Ser Val Glu Gly Lys Gln Asn Leu Val Ile Met Gly Arg Lys Thr Trp
50 55 60

30 Phe Ser Ile Pro Glu Lys Asn Arg Pro Leu Lys Asp Arg Ile Asn Ile
65 70 75 80

35 Val Leu Ser Arg Glu Leu Lys Glu Pro Pro Arg Gly Ala His Phe Leu
85 90 95

40 Ala Lys Ser Leu Asp Asp Ala Leu Arg Leu Ile Glu Gln Pro Glu Leu
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45 Ala Ser Lys Val Asp Met Val Trp Ile Val Gly Gly Ser Ser Val Tyr
115 120 125

50 Gln Glu Ala Met Asn Gln Pro Gly His Leu Arg Leu Phe Val Thr Arg
130 135 140

55 Ile Met Gln Glu Phe Glu Ser Asp Thr Phe Phe Pro Glu Ile Asp Leu
145 150 155 160

60 Gly Lys Tyr Lys Leu Leu Pro Glu Tyr Pro Gly Val Leu Ser Glu Val
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65 Gln Glu Glu Lys Gly Ile Lys Tyr Lys Phe Glu Val Tyr Glu Lys Lys
180 185 190

70 Gly Ser Arg Ser Ala Arg Leu Leu Ser Gly Ile Val Gln Gln Gln
195 200 205

75 Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His Met Leu Gln Leu
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80 Thr Ala Trp Gly Ile Lys Gln Leu Arg Ala Arg Leu Gln Ala Leu Glu
225 230 235 240

Thr Leu Met Gln Asn Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys Gly
245 250 255

5 Arg Ile Ile Cys Tyr Thr Ser Ala Arg Trp His Ala Ser Trp Ser Asn
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Lys Ser Leu Glu Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp
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10 Gln Gln Val Asn Asn Val Ser Ser Ile Ile Tyr Asp Lys Ile Leu Glu
290 295 300

15 Ala Gln Asp Gln Gln Glu Glu Asn Val Arg Glu Leu Leu Glu Leu Asp
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Lys Trp Ala Ser Leu Trp Asn Trp Phe Asp Ile Thr Asn Trp Leu Trp
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20 Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Pro Glu Gln Lys Leu Ile
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25 355 360 365

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Tyr Thr Ser Ala Arg Trp His
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5 Tyr Thr Ser Ala Arg Trp His
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15 <220>
<223> Description of Artificial Sequence:HIV Consensus
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Glu Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys Gly Arg Ile Ile Cys
1 5 10 15

25 Tyr Thr Ser Ala Arg Trp His
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25 <210> 62
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30 <220>
<223> Description of Artificial Sequence:HIV Consensus
Sequence

35 <400> 62
Glu Thr Leu Met Gln Xaa Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys
1 5 10 15

40 Gly Arg Ile Ile Cys Tyr Thr Ser Ala Arg Trp His
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45 <210> 63
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Gly Arg Glu Thr Leu Met Gln Xaa Gln Gln Arg Leu Asn Ser Trp Gly
1 5 10 15

5 Cys Lys Gly Arg Ile Ile Cys Tyr Thr Ser Ala Arg Trp His
20 25 30

10 <210> 64
<211> 35
<212> PRT
<213> Artificial Sequence

15 <220>
<223> Description of Artificial Sequence:HIV Consensus
Sequence

20 <400> 64
Arg Ala Arg Leu Gln Ala Leu Glu Thr Leu Met Gln Xaa Gln Gln Arg
1 5 10 15

Leu Asn Ser Trp Gly Cys Lys Gly Arg Ile Ile Cys Tyr Thr Ser Ala
20 25 30

25 Arg Trp His
35

30 <210> 65
<211> 33
<212> PRT
<213> Artificial Sequence

35 <220>
<223> Description of Artificial Sequence:HIV Consensus
Sequence

40 <400> 65
Asp Gln Gln Val Asn Asn Val Ser Ser Ile Ile Tyr Asp Lys Ile Leu
1 5 10 15

Glu Ala Gln Asp Gln Gln Glu Glu Asn Val Arg Glu Leu Leu Glu Leu
20 25 30

45 Asp

50 <210> 66
<211> 220
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:HIV Consensus
Sequence

<400> 66

5 Ala Arg Leu Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu
1 5 10 15

Arg Ala Ile Glu Ala Gln Gln His Met Leu Gln Leu Thr Ala Trp Gly
20 25 30

10 Ile Lys Gln Leu Arg Ala Arg Leu Gln Ala Leu Glu Thr Leu Met Gln
35 40 45

15 Asn Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys Gly Arg Ile Ile Cys
50 55 60

Tyr Thr Ser Ala Arg Trp His Ala Ser Trp Ser Asn Lys Ser Leu Glu
65 70 75 80

20 Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Gln Gln Val Asn
85 90 95

25 Asn Val Ser Ser Ile Ile Tyr Asp Lys Ile Leu Glu Ala Gln Asp Gln
100 105 110

Gln Glu Glu Asn Val Arg Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser
115 120 125

30 Leu Trp Asn Trp Phe Asp Ile Thr Asn Trp Leu Trp Tyr Ile Lys Ile
130 135 140

Phe Ile Met Ile Val Gly Gly Leu Val Gly Leu Arg Ile Val Phe Ala
145 150 155 160

35 Val Leu Ser Ile Val Asn Arg Val Arg Gln Gly Tyr Ser Pro Leu Ser
165 170 175

Leu Gln Thr Arg Pro Pro Val Pro Arg Gly Pro Asp Arg Pro Glu Gly
180 185 190

40 Ile Glu Glu Glu Gly Gly Glu Arg Asp Arg Asp Thr Ser Gly Arg Leu
195 200 205

45 Val His Gly Phe Leu Ala Ile Ile Trp Val Asp Leu
210 215 220

<210> 67

<211> 149

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:HIV Consensus

Sequence

<400> 67
Ala Arg Leu Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu
5 1 5 10 15

Arg Ala Ile Glu Ala Gln Gln His Met Leu Gln Leu Thr Ala Trp Gly
20 25 30

Ile Lys Gln Leu Arg Ala Arg Leu Gln Ala Leu Glu Thr Leu Met Gln
10 35 40 45

Asn Gln Gln Arg Leu Asn Ser Trp Gly Cys Lys Gly Arg Ile Ile Cys
15 50 55 60

Tyr Thr Ser Ala Arg Trp His Ala Ser Trp Ser Asn Lys Ser Leu Glu
65 70 75 80

Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Gln Gln Val Asn
20 85 90 95

Asn Val Ser Ser Ile Ile Tyr Asp Lys Ile Leu Glu Ala Gln Asp Gln
25 100 105 110

Gln Glu Glu Asn Val Arg Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser
115 120 125

Leu Trp Asn Trp Phe Asp Ile Thr Asn Trp Leu Trp Tyr Ile Lys Ile
30 130 135 140

Phe Ile Met Ile Val
145

<210> 68
<211> 23
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 68
Asn Gln Gln Leu Leu Ser Leu Trp Gly Cys Lys Gly Lys Leu Val Cys
40 1 5 10 15

Tyr Thr Ser Val Lys Trp Asn
45 20

<210> 69
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: HIV Consensus

Sequence

<400> 69
Gly Arg Glu Thr Leu Met Gln Asp Gln Gln Arg Leu Asn Ser Trp Gly
1 5 10 15

Cys Lys Gly Arg Ile Ile Cys Tyr Thr Ser Ala Arg Trp His
20 25 30

<210> 70
<211> 160
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 70
Ala Ala Ile Gly Ala Leu Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser
1 5 10 15

Thr Met Gly Ala Ala Ser Val Thr Leu Thr Val Gln Ala Arg Leu Leu
20 25 30

Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu
35 40 45

Ala Gln Gln His Met Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu
50 55 60

Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu
65 70 75 80

Leu Gly Phe Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Val
85 90 95

Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Asp Asp Ile Trp Asn
100 105 110

Asn Met Thr Trp Met Gln Trp Glu Arg Glu Ile Asp Asn Tyr Thr Ser
115 120 125

Leu Ile Tyr Ser Leu Leu Glu Lys Ser Gln Thr Gln Gln Glu Lys Asn
130 135 140

Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp Asn Trp
145 150 155 160